|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Maths at Bowerham** | | | | | | |
| Units of Maths (provisional – these may be subject to change) | | | | | | |
|  | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Week 1 | Place Value | Multiplication and Division | Place Value and Negative Numbers | Fractions  Geometry (Shape) | Place Value  Measurements and Statistics | Division |
| Week 2 | Addition and Subtraction | Fractions |
| Week 3 | Addition and Subtraction | Fractions | Multiplication | Measurement (Volume) | Percentages |
| Week 4 | Multiplication and Area  Time | Measures (Length, Mass and Capacity) | Statistics | Geometry | Statistics |
| Week 5 | Statistics  Geometry (Angles) | Geometry | Problem Solving including Bar Modelling | Addition and Subtraction | Measurement |
| Week 6 | Geometry and Measures | Assess and Review | Assess and Review | Multiplication | Assess and Review |
|  | | | | | | |

|  |  |
| --- | --- |
|  | |
| **Topic** | **End of Year Expectation** |
| Number and Place Value | * Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 * Count forwards and backwards in thousandths * Read, write, order and compare numbers to 1,000,000 and determine the value of each digit * Read, write, order and compare numbers with up to 3 decimal places * Identify the value of each digit to three decimal places * Identify, represent and estimate numbers using the number line * Find 0.01, 0.1, 1, 10, 100, 1000 and other powers of 10 more or less than a given number * Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 * Round decimals with two decimal places to the nearest whole number and to one decimal place * Multiply/divide whole numbers and decimals by 10, 100 and 1,000 * Interpret negative numbers in context, count on and back with positive and negative whole numbers, including through zero * Describe and extend number sequences including those that involve doubling/halving or multiplying/dividing by 10 and where the step size is a decimal * Read Roman numerals to 1,000 (M); recognise years written as such * Solve number and practical problems that involve all of the above |
| Addition and Subtraction | * Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) * Select a mental strategy appropriate for the numbers involved in the calculation * Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) * Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) * Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places * Add and subtract whole numbers with more than 4 digits and decimals with up to two decimal places, including using formal written methods (columnar addition and subtraction) * Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy * Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why * Solve addition and subtraction problems involving missing numbers |
| Multiplication and Division | * Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) * Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers * Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers * Establish whether a number up to 100 is prime and recall prime numbers up to 19 * Recognise and use square ( 2 ) and cube (3 ) numbers, and notation * Use partitioning to double or halve any number, including decimals to two decimal places * Multiply and divide numbers mentally drawing upon known facts * Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes * Multiply numbers up to 4 digits by a one- or twodigit number using a formal written method, including long multiplication for two-digit numbers * Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context * Use estimation/inverse to check answers to calculations; determine, in the context of a problem, an appropriate degree of accuracy * Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign * Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates |
| Number – Fractions | * Recognise mixed numbers and improper fractions and convert from one form to the other * Read and write decimal numbers as fractions (e.g. 0.71 = 𝟕𝟏/𝟏𝟎𝟎 ) * Compare and order fractions whose denominators are all multiples of the same number (including on a number line) * Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths * Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths * Add and subtract fractions with denominators that are the same and that are multiples of the same number (using diagrams) * Write statements > 1 as a mixed number (e.g. 𝟐/𝟓 + 𝟒 **/5** = 𝟔/𝟓 =1 𝟏/𝟓 ) * Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams * Recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal * Solve problems involving fractions and decimals to three places * Solve problems which require knowing percentage and decimal equivalents of 𝟏 𝟐 , 𝟏 𝟒 , 𝟏 𝟓 , 𝟐 𝟓 , 𝟒 𝟓 and fractions with a denominator of a multiple of 10 or 25 |
| Geometry – Properties of Shapes | * Distinguish between regular and irregular polygons based on reasoning about equal sides and angles * Use the properties of rectangles to deduce related facts and find missing lengths and angles * Identify 3-D shapes, including cubes and other cuboids, from 2-D representations * Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles * Draw given angles, and measure them in degrees (°) * Identify: - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and half a turn (total 180°) - other multiples of 90° |
| Geometry – Position and Direction | * Describe positions on the first quadrant of a coordinate grid * Plot specified points and complete shapes * Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed |
| Statistics | * Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes) * Complete, read and interpret information in tables and timetables * Solve comparison, sum and difference problems using information presented in all types of graph including a line graph * Calculate and interpret the mode, median and range |
| Measurement | * Use, read and write standard units of length and mass * Estimate (and calculate) volume ((e.g., using 1 cm3 blocks to build cuboids (including cubes)) and capacity (e.g. using water) * Understand the difference between liquid volume and solid volume * Continue to order temperatures including those below 0°C * Convert between different units of metric measure * Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints * Measure/calculate the perimeter of composite rectilinear shapes * Calculate and compare the area of rectangle, use standard units square centimetres (cm2 ) and square metres (m2 ) * Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks * Solve problems involving converting between units of time * Use all four operations to solve problems involving measure using decimal notation, including scaling |
|  | |